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# Determinants of Rejected Mail Ballots in Georgia's 2018 General Election

**Enrijeta Shino** (iD) [1], **Mara Suttmann-Lea**[2], **and Daniel A. Smith**[3]

## Abstract

Because of the COVID-19 threat to in-person voting in the November 2020 election, state and local election officials have pivoted to mail-in voting as a potential solution. This method of voting—while safe from a public health standpoint—comes with its own set of problems, as increased use of mail voting risks amplifying existing discrepancies in rejected mail ballots. While some mail ballot rejections are to be expected, a lack of uniformity in whose ballots get rejected among subgroups of voters—whether for mistakes on a ballot return envelope (BRE) or lateness—raise concerns about equal representation. We draw on official statewide voter file and mail-in ballot data from the 2018 midterm election in Georgia, a state that until the pandemic did not have widespread use of mail voting, to test whether some voters are more likely to cast a mail ballot that does not count. Most importantly, we distinguish between ballots rejected for lateness and those rejected for a mistake on the return envelope. We find that newly registered, young, and minority voters have higher rejection rates compared with their counterparts.

## Keywords

vote-by-mail, ballot rejection, elections, voting, election administration

[1] University of North Florida, Jacksonville, USA
[2] Connecticut College, New London, USA
[3] University of Florida, Gainesville, USA

Corresponding author(s):
Enrijeta Shino, University of North Florida, 1 UNF Drive, Jacksonville, FL 32224, USA. Email: e.shino@unf.edu

Well before the general public first heard of COVID-19, an increasing number of voters across the American states were casting ballots by mail (Mann 2014; Shino and Smith 2020; U.S. Election Assistance Commission 2017). Mail-in voting differs from in-person voting in several respects. In contrast to casting a ballot in person, where individuals verify their voter eligibility in real time with election officials *prior* to casting their ballot, mail-in voters have their eligibility evaluated remotely by election administrators *after* they cast their ballot. As such, many voters casting a vote-by-mail (VBM) ballot have little recourse if there is a problem with their ballot return envelope (BRE) or if their ballot is received late by election officials. Given the recent shift across American states to mail-in voting in response to the coronavirus pandemic, we are interested in whether

inequities exist among voters who have their mail ballots rejected, either due to lateness or mistakes/omissions on the BRE.

Challenges associated with mail-in voting, particularly questions concerning administrative rules governing the evaluation of BREs, were on full display during Georgia's November 2018 election. The state received national attention for the rejection of what Georgia refers to as Absentee by Mail ballots after high numbers of ballots were rejected in Gwinnett County, an Atlanta-metro county with a growing population of racial and ethnic minority voters. Then, in the midst of the coronavirus pandemic, Georgia's Secretary of State opted to mail every *active* registered voter a mail ballot application in the state's June 2020 primary.[1] Because there is a strong likelihood that mail-in ballots will continue to increase as an alternative to in-person voting due to health concerns from COVID-19, it is critical to understand the extent to which there might be systematic discrepancies in whose ballots are more or less likely to be counted.

With this backdrop in mind, we assess the challenges associated with the counting of VBM ballots. The main question we address in this study is whether voters of different age and race/ethnicity, as well as recently registered voters, who choose to vote absentee, have their BREs rejected at different rates than other voters. We begin by developing a set of theoretical expectations for whether certain groups of voters are more likely to cast a ballot that is subsequently rejected, and then test these expectations using statewide voter file data and individual-level VBM ballot information from the 2018 midterm election in Georgia. Unlike previous studies (Alvarez, Hall, and Sinclair 2008; Baringer, Herron, and Smith 2020), we distinguish between VBM ballots that were not counted because they were received late by election officials from those returned on time but rejected for a mistake/omission on the BRE.

Casting a valid mail-in ballot entails knowing where, when, and how to request a mail ballot application; how to fill out the ballot; how to correctly complete the voter's certificate and other information on the BRE; how much postage is necessary; and when the deadline is for the BRE to reach the local election office. While these steps may seem commonplace to some, they might not be as easy for others. Because they have a lack of familiarity with the mail-in voting process, we expect young voters and new registrants to be especially likely to make mistakes or omissions on the BRE and to return their ballot too late to be counted.

Largely in line with our theoretical expectations, we find that younger, racial and ethnic minority and recent registrants were more likely to have their ballots rejected (both on-time and late ballots) in the 2018 Georgia election. Although our models are not able to directly test the causal pathways explaining VBM ballot rejections, our findings align with theoretical expectations that both individual-level and systemic factors likely explain why certain groups of voters are more likely to cast late ballots or BREs that are rejected for mistakes, even if they are timely. Our findings raise concerns that not all VBM voters have an equal likelihood of having their vote count, a concern that is all the more acute in the context of the inevitable expansion of mail voting in response to the COVID-19 pandemic.

## Previous Research: Rejected VBM Ballots

The bulk of research on mail voting—whether for all mail elections or states that allow absentee voting by mail —is dedicated to understanding its turnout effects, both in absolute terms and on the composition of the electorate (Berinsky 2005; Southwell and Burchett 2000; Springer 2012). While considering any turnout or partisan effects of mail-in voting is important (Thompson et al. 2020)—particularly in the context of a health pandemic necessitating more mail-in voting—so too is an understanding of the extent to which mail voting may exacerbate existing inequities in whose mail ballot counts. Mail voting—unlike in person voting—does not

allow for the immediate troubleshooting of eligibility problems in the same way that in-person voting does. Although not without its own problems, in-person voting offers voters the chance to talk with poll workers in real time to rectify concerns; at the very least, they can cast a provisional ballot. The same is not true of mail-in voting. While most states offer an opportunity to *cure* (i.e., correct) mail-in ballots (National Conference of State Legislatures [NCSL] 2020), there is no guarantee election officials will expeditiously inform voters of any issues with their BRE.

A small body of research has considered whether there are certain subgroups of voters that are more likely to cast a ballot that gets rejected. In their study of mail voting in Los Angeles, Alvarez, Hall, and Sinclair (2008) find that alongside uniform service personnel, overseas civilians, and permanent absentee voters, language minority voters who requested non-English ballots had a lower likelihood of casting a valid VBM ballot. Although language minority voters in Los Angeles are required to be served in their native language under amendments to the Voting Rights Act, a lack of familiarity with the voting process may explain their disproportionate rate of rejections. Although not central to their theory or analysis, they also find that younger voters—those between the ages of eighteen and twenty-four—are more likely to fail to return their ballot and, of those that are returned, are less likely to be counted. More recently, in their multiyear, cross-county analysis of mail ballots cast in the state of Florida, Baringer, Herron, and Smith (2020) find that a combination of individual and systemic factors—specifically administrative discretion in ballot counting—helps to explain why certain groups of voters are more likely to cast VBM ballots that do not count. They find that young voters, voters not registered with a major political party, and voters requiring assistance while voting are more likely to have their mail ballots rejected. Beyond this, they also find disproportionate rates of mail ballot rejections among those cast by Hispanic voters, out-of-state voters, and military dependents. Moreover, they find that variation in rejection rates across the state's sixty-seven counties suggests nonuniformity in how local election officials count ballots. However, Baringer, Herron, and Smith (2020) do not differentiate between VBM ballots that are rejected because they are late and those that have errors with the BRE.

## Pathways to VBM Rejection: Lateness and Mistakes/Omissions

Existing research on VBM ballot rejections offers evidence of existing inequities in ballot rejections across different subgroups of voters, but these studies do not distinguish among the *reasons* why VBM ballots do not count. Generally speaking, there are two broad categories that explain why a VBM ballot cast by an otherwise eligible registered voter might be rejected. The most straightforward—timeliness—applies to ballots that are returned or postmarked after the deadline laid out in state law. But there are also mistakes or omissions that can happen in the return process, specifically on the BRE. These requirements vary from state to state, but a mismatched address, an omitted birth date, or signature that does not clearly match the voter's signature on file are all grounds for rejection. We consider both of these pathways to rejection in the following sections as they pertain to mail voting generally, but also with regard to Georgia election law,[2] and test the following hypotheses:

**Hypothesis 1:** Young voters and new registrants are more likely to cast a VBM ballot that is rejected for being late.

**Hypothesis 2:** Racial and ethnic minority voters are more likely to cast a VBM ballot that is rejected for being late.

**Hypothesis 3:** Young voters and new registrants are more likely to make a mistake on a BRE that leads to rejection.

**Hypothesis 4:** Racial and ethnic minority voters are more likely to make a mistake on a BRE that leads to rejection.

In the following sections, we explain the rationale behind these hypotheses, situating them in the broader literature on mail-in voting.

## Late VBM Ballots

All states have deadlines delineating when a domestic VBM ballot must be received by an election office to be processed and validated (NCSL 2020). Some states allow ballots that are *postmarked* by Election Day to count; in contrast, Georgia's election law requires all mail ballots must be *received* by the close of the polls on Election Day.[3] We see this as a fairly unambiguous reason—at least from a legal and discretionary perspective—for rejecting a ballot. It leaves little room for discretion by election officials evaluating mail ballots. That is, if election officials decide to count a ballot that is returned late or reject a ballot for being late that is nevertheless returned on time, these are outcomes that cannot be observed (and, we suspect, are highly unlikely). Quite simply, if a ballot is returned late, the decision for whether or not to accept the ballot is relatively straightforward from the perspective of election administrators implementing state law. At the same time, the decision to cast a mail ballot may result in procrastination (Bennion and Nickerson 2011).

## BRE Mistakes/Omissions

In contrast to late VBM ballots, those returned on time but rejected for mistakes or omissions by the voter on the BRE necessitate a more nuanced set of considerations. While local election officials certainly do not have absolute discretion—state law dictates the criteria for what counts as a valid return envelope—there is still room for differences in interpretation and application of state law when it comes to return envelope evaluations.

One area where there is significant room for subjectivity and discretion is with the verification of signatures on a BRE. Voting a mail ballot in many states requires voters to sign an oath on return envelopes and possibly additional information.[4] As with provisional ballots (Hanmer and Herrnson 2014; Merivaki and Smith 2020) or when a voter signs in to vote in person (Suttmann-Lea 2020), local election officials charged with comparing a voter's signature with a signature on file may have different perspectives in deciding what constitutes a matching signature. Forensic experiments have found a nonzero chance of real signatures being rejected as not matching and forged signatures being accepted as valid (Herbst and Liu 1977). Even in states that have transitioned to all mail voting systems, election officials concede that not every voter signs his or her ballot legibly. Washington Secretary of State Kim Wyman has claimed that "election administrators get training from signature experts at our State Patrol" to decipher VBM ballots, yet "[s]ometimes we'll see our younger voters change their signature style when they move into a professional setting" (Moretti 2014).

A mismatched signature, however, is not the only type of error that might exist on a voter's BRE. There might be a missing signature (the voter's or a witness's), and there might be errors with the voter's date of birth, the date the return envelope was signed, or a voter's address. All of these may be grounds for election officials to reject a mail ballot. In Georgia, if any of the supplied information on the return envelope does not match what is on file with the voter's registration record, this is grounds for rejection.[5]

Ideally, ballots with mistakes that are grounds for rejection should be treated equally across jurisdictions. However, comporting with research on VBM ballot rejections in Florida by Baringer, Herron, and Smith (2020), descriptive evidence from the 2018 election in Georgia suggests that not all ballots rejected for errors were treated equally. Most glaring was the question of whether to accept BREs that had a missing or incorrect date of

birth of voters. For example, before a court order, Gwinnett County decided to not accept these ballots, while Fulton, Cobb, Henry, and DeKalb counties all accepted ballots with missing or incorrect birth dates (Ingraham 2018). As such, while individual voter mistakes are technically the source of ballot rejection, differences across jurisdictions in their application of state law decrease the likelihood that disparities in ballot rejection are only the result of individual voter error. In a recent study validating the reliability of Florida's voter registration file information using a phone survey, Shino et al. (2020) found that about 18 percent of Florida registrants failed to verify at least one piece of identifying information as recorded on their voter registration file record. This suggests that discrepancies between the voter file and a registrant's self-reported information on a BRE might lead to higher VBM rejection rates for some voters.

## Whose VBM Ballots Are Not Counted? Individual-Level and Systemic Factors

Across the country, mail-in ballots have a higher rejection rate than in-person ballots. In the 2016 presidential election, for example, Election Assistance Commission data show that approximately 1.0 percent of ballots cast by mail were not counted for various BRE mistakes/omissions, or the ballot being returned too late. In contrast, roughly a third fewer in-person ballots cast in the 2016 election were rejected.[6] These differences stem, in part, because verification of voter eligibility happens remotely with mail voting, which means voters are not able to correct mistakes, have access to real-time assistance as they vote, or address ballot challenges as they are with in-person voting. Examining general patterns in VBM ballot rejections do not address the question, however, of whether there are certain groups of voters more likely to cast a mail ballot that gets rejected, and the possible mechanisms that explain these differences.

Having laid out the different pathways for ballot rejection—late ballots and mistakes/omissions made on BREs—we turn to whether certain subgroups of voters are more likely to cast a ballot that is rejected for one of these reasons. We argue there is good reason to expect that both individual-level and systemic factors condition whether a mail ballot is received after a state's deadline for receipt or invalidated for mistakes on the return envelope. We look at both factors as they pertain to late and on-time rejected VBM ballots.

## Who Casts a Late VBM Ballot?

We argue there are several reasons why younger and new registrants should be more likely to return their ballots late. Millennials and Generation-Z cohorts may have less familiarity with important deadlines or the vagaries of the U.S. Postal Service. Knowing where to buy stamps or drop off letters may pose a barrier to younger voters, given that they have less preference for using "snail mail" (U.S. Postal Service 2018). Theirs is a touch-screen world—even communicating via email may seem archaic. As such, it would not be surprising if younger voters have more difficulty negotiating the return of a timely mail ballot through the postal service; they are less engaged with the "old-fashioned" technology used to vote by mail (Delli Carpini 2000). While there is no reason to believe that newly registered voters have the same distaste or lack of understanding of using the postal service, new voters in a state might not know all the rules of the game when it comes to voting by mail. A lack of familiarity with voting guidelines and deadlines might predispose them to be more likely to cast a ballot that is returned late relative to longer term registrants. Given these expectations, our *first hypothesis* is that young voters and new registrants are more likely to cast a VBM ballot that is rejected for lateness.

When it comes to individual-level explanations for late ballots, there is less theoretical support for an argument that racial and ethnic minorities are, as individuals, more predisposed to cast a VBM ballot that is late. Rather, low-quality experiences in other aspects of election administrative services—for example, the length of lines at polling places—are explained in part by differences in election resources from jurisdiction to

jurisdiction (Barreto, Cohen-Marks, and Woods 2009; Herron and Smith 2014; Pettigrew 2017). Despite making every effort to have a ballot returned on time, ballots cast by these voters may be more likely to be returned late through no fault of their own as a result of underfunded postal services in their county, or a lack of administrative resources at their local election offices for delivering ballots to voters in a timely fashion once applications are received. As such, our *second hypothesis*—that racial and ethnic minority voters are also more likely to cast a ballot that is rejected for being late—centers on discrepancies in county resources for ensuring the timely delivery of mail ballots for communities with higher populations of racial and ethnic minority voters.

## Who Casts a VBM Ballot with a Return Envelope Error?

As with ballots rejected for lateness, we expect younger, new registrants, and racial and ethnic minorities to be more likely to cast a BRE with errors or omissions on timely returns. Young voters may be less likely to have a well-formed, stable signature, and the value of a "wet" signature may not be held in high regard. Beyond rejections for mismatching signatures, young and new registrants may be more likely to make other mistakes that lead to rejection. Younger voters are not yet conditioned to be habitual voters who know the ins-and-outs of the voting process (Highton and Wolfinger 2001; Shino and Smith 2018). Ignorance of VBM procedures may be exacerbated by differences in resources and administrative capacity from county to county. Young voters may receive different levels of outreach from local election officials about how to cast a mail ballot and may be less likely to be contacted by groups or parties with information about how to vote (Michelson 2005). Our *third hypothesis*—that young voters and new registrants are more likely to make mistakes on BREs that lead to rejection—turns on a group's newness to the voting process.

Unlike young voters and new registrants, we have little reason to believe that racial and ethnic minority voters are more predisposed to making mistakes or omissions on their mail BREs. Instead, we suggest it is a combination of systemic barriers and lower quality resources that, in part, explain higher rates of rejection for these voters. First, differences in resources from county to county, especially as it pertains to voter education efforts, offers one possible explanation. Although there has been little direct research on variation in voter education efforts among racial and ethnic minority voters compared with white voters, research on the provision of services in other areas of government, such as the welfare state, provides insight into the kinds of disparities these groups experience in the services they receive. For example, nonwhite recipients of welfare benefits are penalized for violating rules more than white recipients (Keiser, Mueser, and Choi 2004). White applicants also tend to receive higher quality information when inquiring about welfare benefits (Ernst, Nguyen, and Taylor 2013).[7]

These patterns extend to administrative services provided by election officials. Examinations of how mail voting is administered fit within a broader literature that considers whether local election officials treat certain groups of voters differently in their implementation of election laws and provision of election-related services (Kimball and Kropf 2006). There is a range of evidence from different contexts suggesting these voters may face greater barriers when trying to vote as a function of their racial and ethnic background and discrepancies in election administration (King and Barnes 2019). When reaching out to election and elected officials for information about the voting process, for example, Hispanic and black constituents are less likely to receive any answer to their queries, and when they do, they tend to be lower quality (Butler and Broockman 2011; White, Nathan, and Faller 2015). This evidence supports an explanation for higher rates of racial and ethnic minority of VBM ballot rejections that centers on lower quality voter education for these voters by election officials.

Research on in-person voting documents similar disparities. Evidence from New Mexico shows that, along with Election Day and male voters, Hispanic voters are more likely to be asked for identification by poll

workers when none was required (Atkeson et al. 2014). Racial and ethnic minority voters are more likely to experience longer lines at polling places on Election Day as a result of how election administrators allocate resources (Herron and Smith 2014, 2015; Pettigrew 2017); the 2004 evidence from Los Angeles shows that nearly 30 percent of poll workers incorrectly told observers it was the law in California to show identification, claims that were higher in precincts that had more racial and ethnic minority voters (Barreto, Cohen-Marks, and Woods 2009). Research from other electoral jurisdictions also shows that black and Hispanic registered voters reported they were more likely than white voters to be asked to show identification (Ansolabehere 2009; Cobb, Greiner, and Quinn 2010).

In short, there is evidence to suggest that racial and ethnic minorities have lower quality experiences when engaging in elections and may not have access to the same kind of information about the voting process as white voters. We have little reason to believe that these kinds of disparities experienced by these voters documented in other aspects of election administration do not also extend to the mail voting process. We suggest similar disparities in information extend to the mail voting process, where both a lack of resources and lower quality responses from election officials to queries about mail voting add to the likelihood that racial and ethnic minorities will make mistakes on their BRE that ultimately leads to rejection. This, combined with research from other jurisdictions showing higher rates of VBM ballot rejections for racial and ethnic minorities (Alvarez, Hall, and Sinclair 2008; Baringer, Herron, and Smith 2020), leads us to expect racial and ethnic minorities are more likely to cast a VBM ballot that is rejected for a mistake or omission on the return envelope. While the lack of observational data does not allow us to directly test for the mechanisms that explain rejection rates of VBM ballots by different voters, it is important to consider both how individual voter behavior and local election official decisions may explain the rejection of VBM ballots (Hood and Bullock 2011). Our *fourth hypothesis*—that racial and ethnic minority voters are more likely to cast a ballot that is rejected for mistakes on the return envelope—pivots on known disparities in services provided to racial and ethnic minorities in other areas of election administration and government services that likely extend to voter education and outreach surrounding mail balloting.

## Data and Descriptive Analysis

To test our hypotheses, we draw on publicly available individual-level administrative data from the Georgia Elections Division. Using a voter's unique registration ID number, we merge an October 2018 snapshot of the statewide voter list to an October 2019 statewide voter history file and a January 2019 statewide "absentee" file.[8]

Our analysis begins with a series of descriptive statistics. Figure 1 maps the overall mail-in vote rejection rate by county, providing an overview of the considerable variation across the state's 159 counties. For example, counties such as Polk (13.1%), Taylor (13.04%), Pickens (12.45%), Clay (11.32%), Putnam (10.25%), and Gwinnett (6.3%) had higher rejection rates compared with other counties. This geographic heterogeneity, however, does not address our main question about VBM in the 2018 Georgia midterm election: were mail ballots cast by certain subgroups more likely to be rejected?
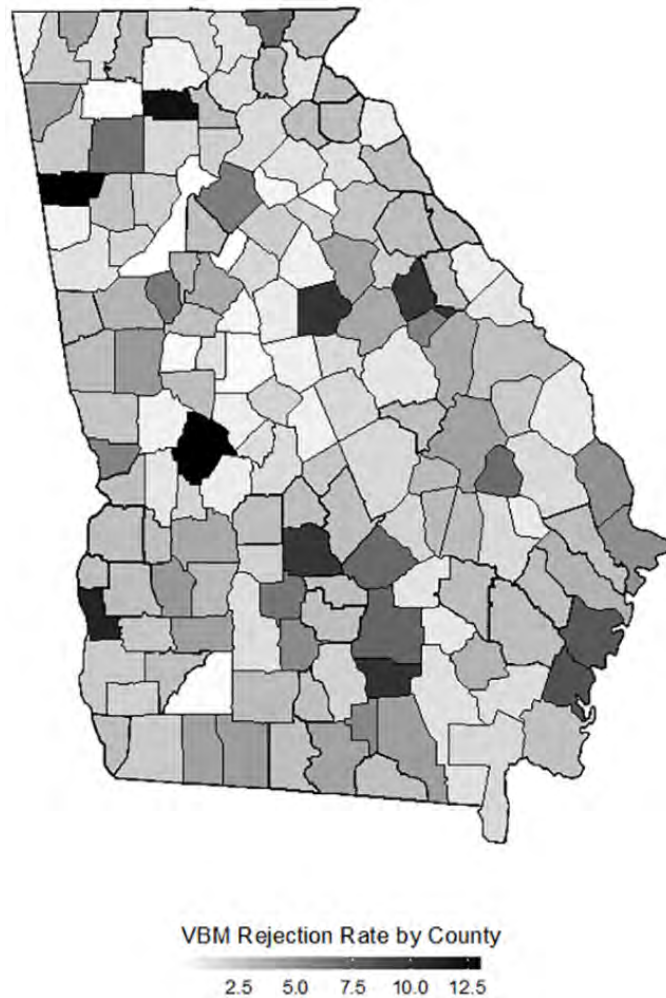
**Figure 1**. The 2018 general election overall VBM rejection rate by county.
The overall rejection rate for VBM ballots is calculated as the ratio of the number of VBM ballots rejected over the total number of VBM ballots cast in a county. VBM = vote-by-mail.

To illuminate what might be driving this variation, Table 1 provides descriptive data broken down by VBM ballots arriving late, and on-time ballots that had a problem with the BRE. Table 1 reveals that a higher percentage of ballots were rejected because they were received late (1.58%) by election officials than for an issue related with the BRE (1.09%). Breaking down rejection rate by race and ethnicity, Table 1 shows that minority voters had a higher percentage of rejected ballots due to being either late or on time compared with white voters.

**Table 1.** Late and On-Time Ballot Rejections, by Reason.

| | VBM ballots cast | Late rejections | | On-time rejections | | Reasons for on-time rejections | | | | | | | |
| | | | | | | Signature/oath | | Date of birth | | Address | | Other issues | |
| | | n | % | n | % | n | % | n | % | n | % | n | % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Observations | | 4,186 | 1.58 | 2,888 | 1.09 | 2,392 | 82.83 | 154 | 5.33 | 217 | 7.51 | 102 | 3.53 |
| Race | | | | | | | | | | | | | |
| White | 120,282 | 1,756 | 1.46 | 712 | 0.59 | 566 | 79.49 | 31 | 4.35 | 86 | 12.08 | 18 | 2.53 |
| Black | 104,173 | 1,647 | 1.58 | 1,515 | 1.45 | 1,286 | 84.88 | 78 | 5.15 | 92 | 6.07 | 49 | 3.23 |
| Hispanic | 8,145 | 134 | 1.65 | 120 | 1.47 | 95 | 79.17 | 6 | 5.00 | 11 | 9.17 | 7 | 5.83 |
| Asian | 10,825 | 194 | 1.79 | 292 | 2.70 | 245 | 83.90 | 21 | 7.19 | 10 | 3.42 | 16 | 5.48 |
| Other | 21,992 | 412 | 1.87 | 242 | 1.10 | 198 | 81.82 | 18 | 7.44 | 16 | 6.61 | 9 | 3.72 |
| Total | 265,417 | | | | | | | | | | | | |
| Age | | | | | | | | | | | | | |
| 18–22 | 25,599 | 1,222 | 4.77 | 223 | 0.87 | 145 | 65.02 | 7 | 3.14 | 62 | 27.80 | 6 | 2.69 |
| 23–29 | 22,163 | 803 | 3.62 | 190 | 0.86 | 138 | 72.63 | 6 | 3.16 | 33 | 17.37 | 8 | 4.21 |
| 30–34 | 10,969 | 218 | 1.99 | 108 | 0.98 | 80 | 74.07 | 6 | 5.56 | 16 | 14.81 | 6 | 5.56 |
| 35–44 | 21,390 | 324 | 1.51 | 231 | 1.08 | 182 | 78.79 | 18 | 7.79 | 18 | 7.79 | 12 | 5.19 |
| 45–59 | 49,597 | 569 | 1.15 | 651 | 1.31 | 552 | 84.79 | 36 | 5.53 | 30 | 4.61 | 24 | 3.69 |
| 60+ | 135,679 | 1,007 | 0.74 | 1,478 | 1.09 | 1,293 | 87.48 | 81 | 5.48 | 56 | 3.79 | 43 | 2.91 |
| Gender | | | | | | | | | | | | | |
| Female | 158,247 | 2,507 | 1.58 | 1,663 | 1.05 | 1,377 | 82.80 | 79 | 4.75 | 134 | 8.06 | 55 | 3.31 |
| Male | 107,170 | 1,636 | 1.53 | 1,218 | 1.14 | 1,013 | 83.17 | 75 | 6.16 | 81 | 6.65 | 44 | 3.61 |
| New registrant | | | | | | | | | | | | | |
| 2018 | 18,893 | 574 | 3.04 | 157 | 0.83 | 122 | 77.71 | 5 | 3.18 | 27 | 17.20 | 1 | 0.64 |
| Before 2018 | 246,524 | 3,569 | 1.45 | 2,724 | 1.10 | 2,268 | 83.26 | 149 | 5.47 | 188 | 6.90 | 98 | 3.60 |

The table shows percentages for voters' characteristics and VBM rejection reasons. There were twenty observations that were received on time but had a late rejection reason, and therefore they were dropped from the statistics shown above. In the forthcoming analysis, we collapse the on-time rejection reasons. VBM = vote-by-mail.

With regard to our expectation as to whether previous experience with VBM voting mitigates rejection rates, we use two proxy variables for experience: one is the age of the voter and the other is whether the voter is a new registrant. Table 1 shows that 4.77 percent of the rejected VBM ballots cast by young voters (eighteen to twenty-two years old) were rejected, because they were received late by the election officials. Similarly, 3.04 percent of the rejected VBM ballots cast by new registrants were received after Election Day. Contrary to our expectations, though, Table 1 shows that younger voters had their on-time VBM ballots rejected at a lower rate compared with older voters. A similar pattern is observed for new registrants. In addition, Table 1 reveals that the main reason (82.83%) for the rejection of on-time VBM ballots is a mismatched signature or missing information in the "oath" section of the return envelope. Minority voters have a higher percentage of on-time ballots rejected due to a signature or address issue than white voters, while new registrants had a higher percentage of their ballot being rejected due to an issue related to their address. We emphasize, however, that all of these descriptive statistics do not control for other factors that might affect rejection rates.

Figure 2 provides additional descriptive information, plotting the inverse empirical cumulative distribution function of rejection rates for each age group (registration year) within each county, along with their respective probability density functions. The rejection rates are computed using the following formula:

$$\tag{1}$$

$$p_{ij} = \frac{\sum_{k=1}^{n_j} \sum_{r:r=1} I_{ijkr}}{\sum_{k=1}^{n_j} I_{ijk}},$$

$$\text{for every } i = 1, \ldots, N \text{ and } j = 1, \ldots, n_i,$$

where $I_{ijkr}$ is equal to unity if the VBM ballot of voter $k$ in age group (registration year) $j$ and county $i$ is rejected, $r = 1$, and $I_{ijk}$ is equal to unity if VBM voter $k$ is in age group (registration year) $j$ of county $i$. Simply put, the numerator represents the number of VBM ballots *rejected* for each age group (registration year) within each county, and the denominator represents the number of VBM voters in each age group within each county.
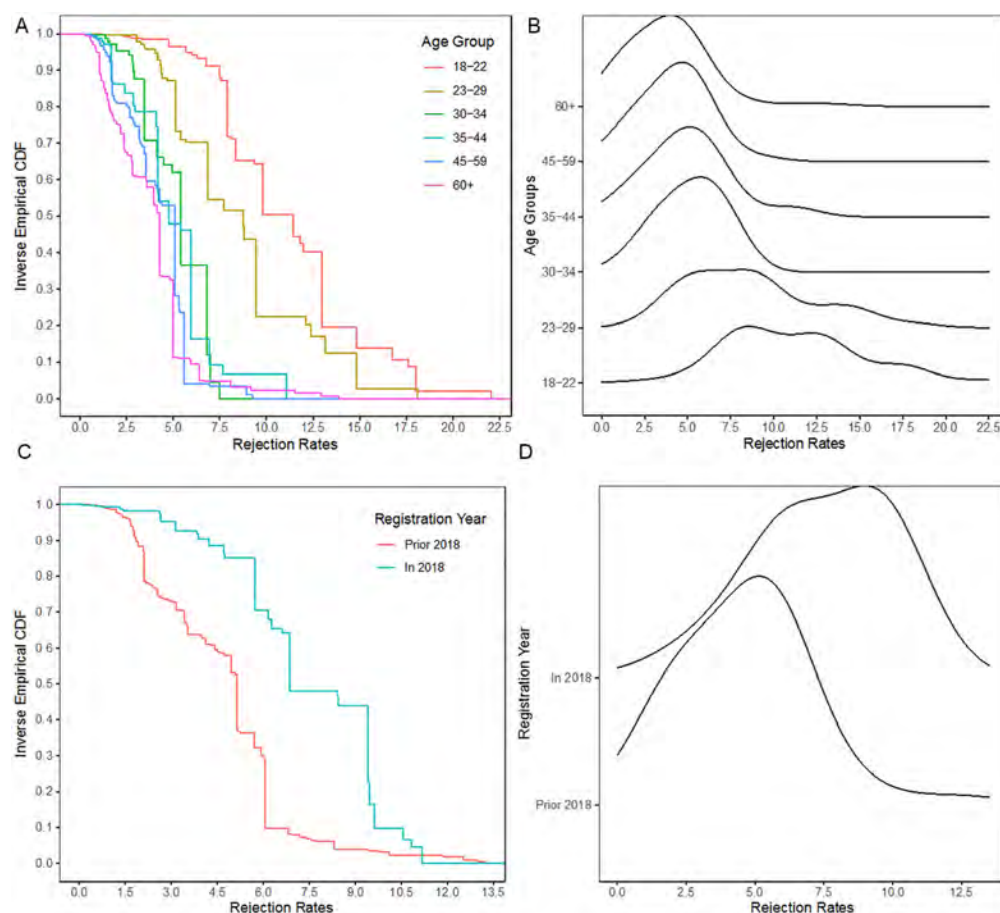


**Figure 2**. VBM rejection probabilities by age group and registration time: (A) inverse empirical cumulative distribution function (CDF) by age group, (B) kernel density by age group, (C) inverse empirical CDF by registration year, and (D) kernel density by registration year.
Plots (A) and (C) show the inverse empirical cumulative distribution functions of rejection rates, while plots (B) and (D) show their respective kernel density functions. The rejection rates are calculated as the number of rejected VBM ballots cast by each category of the age group (or those registered in 2018) in a county divided by the total number of VBM ballots cast by each category of the age group (or those registered in 2018) in that county. VBM = vote-by-mail.

Figure 2A clearly reveals that the probability of a rejected VBM ballot is higher for the age group eighteen to twenty-two when compared with all the other age groups. Therefore, we say that the cumulative distribution function of the age groups' (eighteen to twenty-two years old) first-order stochastically dominates (FOSD) all the other age groups' cumulative distribution functions. We observe the same pattern in Figure 2C, where there is a wide gap between the inverse cumulative distribution functions of VBM voters registered to vote for the first time in 2018 and those registered prior to 2018. Figure 2B and 2D show the difference in probability distributions of VBM ballot rejection rates for age group and registration year.[9]

The descriptive evidence provided motivates and sets the foundation of our econometric analysis described in the following section. VBM ballot rejection rates vary across counties, but what explains this variation? Are certain subgroups of registrants more likely than others to be subjected to having their VBM ballots rejected? To take into account these considerations, we estimate a series of ordinary least squares (OLS) regression models for VBM rejection.[10]

## Empirical Framework

We now turn to our model specification and estimation. Our main dependent variable is ballot status, which is coded 1 if the VBM ballot was rejected and 0 if it was coded as accepted. Differentiating by the timing of when VBM ballots are received by local election officials, we introduce two new dependent variables: rejected VBM ballots that were received before or on Election Day (on-time), and rejected VBM ballots that were received after the Election Day (late).

Our primary independent variables are a registrant's race/ethnicity, age, and registration year. In our estimations, we include dummy variables drawn from the Georgia voter file for a registrant's race/ethnicity (black, Hispanic, Asian, or other race/ethnicity), with white registrants excluded as the base category.[11] The age of the voter is a categorical variable for the following age groups: eighteen to twenty-two, twenty-three to twenty-nine, thirty to thirty-four, thirty-five to forty-four, forty-five to fifty-nine, and sixty and older. To account for a voter's familiarity with the VBM voting process in Georgia, we include a proxy variable for the voter's registration year, under the assumption that voters who are more recently registered may be more likely to make a mistake that would lead to their VBM ballot being rejected by local election authorities. All models are estimated with county fixed effects and robust standard errors.

Let each voter $i$ in our sample be characterized by the vector $(\mathbf{r}_i, \mathbf{x}_i, \mathbf{u}_i)$, which takes values in the set $R \times X \times U$. Here, $r_i$ is a binary variable taking unity if $i$'s VBM was rejected; $\mathbf{x}_i$ denotes a row vector of voter's characteristics and $\mathbf{u}_i$ a scalar of unobserved characteristics. The following equation represents whether a ballot cast by mail was rejected: $r_i = x'_i\beta + u_i$, where $x_i$ is a row vector of observed characteristics of voter $i$, and the parameters of interest are represented by the column vector $\beta$. Using ordinary least squares, we estimate the parameters of the model shown above.

## Findings

Recall that Figure 2 does not differentiate among the two major categories for why a VBM ballot is rejected. However, some VBM ballots are rejected due to a missing or mismatched signature, or an unchecked oath box, but others are rejected because they were received by county registrars after the state's Election Day deadline.

To analyze ballot rejection patterns across age groups, racial/ethnic groups, and new registered voters, we estimate a series of models as shown in Table 2. The outcome variable across all three models is ballot status, which, in the Received late model (1), is coded 1 if the VBM ballot was rejected and received after Election Day by election officials and zero if accepted. In the Received on-time model (2), the outcome variable is coded 1 if the VBM ballot was rejected and the ballot was received before or on Election Day and zero if accepted. In the All rejected VBM ballots model (3), the outcome variable is coded 1 if the VBM ballot was rejected and zero if accepted, regardless of the time when it was received. From the Georgia voter file, we use individual-level information about a registrant's race/ethnicity, age, registration year, sex, and county fixed effects.

**Table 2.** Estimated Models for Rejected VBM Ballots.

| | DV: rejected VBM ballots | | | | | |
| | Received late (1) | | Received on-time (2) | | All rejected ballots (3) | |
| | Estimate | SE | Estimate | SE | Estimate | SE |
|---|---|---|---|---|---|---|
| Black | 0.001 | 0.001 | 0.012 | 0.001 | 0.013 | 0.001 |
| Hispanic | −0.003 | 0.002 | 0.010 | 0.002 | 0.007 | 0.003 |
| Asian | 0.001 | 0.002 | 0.022 | 0.002 | 0.023 | 0.003 |
| Other | 0.002 | 0.001 | 0.006 | 0.001 | 0.008 | 0.002 |
| Age 23–29 | −0.017 | 0.003 | −0.002 | 0.001 | −0.019 | 0.003 |
| Age 30–34 | −0.040 | 0.003 | −0.002 | 0.002 | −0.041 | 0.003 |
| Age 35–44 | −0.047 | 0.002 | −0.003 | 0.001 | −0.048 | 0.002 |
| Age 45–59 | −0.053 | 0.002 | −0.000 | 0.001 | −0.052 | 0.002 |
| Age 60+ | −0.058 | 0.002 | −0.0001 | 0.001 | −0.057 | 0.002 |
| New registrant | 0.008 | 0.002 | −0.002 | 0.001 | 0.006 | 0.002 |
| Female | 0.001 | 0.001 | −0.001 | 0.001 | −0.0001 | 0.001 |
| Gender: other | 0.004 | 0.009 | 0.015 | 0.009 | 0.018 | 0.012 |
| Constant | 0.050 | 0.002 | −0.003 | 0.001 | 0.046 | 0.002 |
| County fixed effects | ✓ | | ✓ | | ✓ | |
| Observations | 223,539 | | 222,273 | | 226,420 | |

The DV for the first model is coded 1 if the VBM ballot was received late and was rejected. For the second model, the dependent variable is coded 1 if the VBM ballot was received on-time and was rejected. In the third model, the dependent variable is coded 1 if the VBM ballot was noted as rejected in the voter file. All models are estimated with county fixed effects and robust standard errors clustered by county. VBM = vote-by-mail; DV = dependent variable.

Table 2 (1) reveals that there are no statistically significant race effects for rejected VBM ballots that were received late by election officials. However, when it comes to a voter's age, we find that the rejection rate for late-received VBM ballots decreases as age increases. To be more specific, we find that twenty-three to twenty-nine-year-olds were 1.7 percentage points less likely to have their VBM ballot rejected for being late compared with the youngest cohort of eighteen- to twenty-two-year-olds. Older voters age sixty or older were 5.8 percentage points less likely to have their ballot rejected for being late compared with eighteen- to twenty-two-year-olds. In addition, we find that new registrants were 0.8 percentage points more likely to have their ballot rejected for being late compared with their longer registered counterparts. In sum, we find strong support for Hypothesis 1 and no statistical support for Hypothesis 2.

With regard to on-time received VBM ballots that were rejected for a problem with the return envelope, Table 2 (2) reveals that black VBM voters were 1.2 percentage points more likely to have their on-time ballot envelopes rejected compared with white voters. We observe similar effects for other racial and ethnic minorities whose ballots were rejected in the election cycle, with Hispanic voters having a 1-percentage point higher probability and Asian voters having a 2.2-percentage point higher probability for a rejected VBM ballot, compared with white voters. Regarding a voter's age, we find slightly different effects for on-time VBM ballot rejections compared with late-received VBM ballot rejections. In this case, we find fewer statistically significant differences across age groups. For example, we find no statistically significant differences in the rejection rate of eighteen- to twenty-two-year-olds compared with those VBM voters who were sixty years old or older. We also find that new registrants had a lower probability of having their on-time VBM ballots rejected compared with their counterparts. In short, we find partial support for Hypothesis 3 and full support for Hypothesis 4. Turning to our overall findings for rejected VBM ballots shown in Table 2 (3), we see that

minority, younger, and new registrants all had a higher probability of having their VBM ballot rejected, compared with their counterparts.

## Discussion

As election administrators across the country continue to respond to the COVID-19 pandemic, the popularity of voting by mail among the electorate is likely to increase. Despite the virtues of casting one's ballot away from potentially crowded in-person voting locations, it is imperative to highlight one of the possible liabilities of the VBM system—rejected ballots cast by eligible voters. Expanding on research that examines mail-in ballot rejection rates (Alvarez, Hall, and Sinclair 2008; Baringer, Herron, and Smith 2020), we offer insights into which subgroups of the electorate are more likely to have their VBM ballot invalidated, either because it was received on-time with an error *or* it was received after a state's deadline by election officials.

Our findings largely confirm our expectations about whose ballot is more likely to be rejected for either reason. Racial and ethnic minority groups are more likely than their white counterparts to cast a timely ballot that is rejected. They are more likely than their white counterparts to cast a ballot that is rejected for mistakes on the return envelope. Beyond this, new registrants are more likely to cast a ballot that is rejected for being late. One possible explanation for this deserving further exploration is whether new registrants—individuals who are also more likely to be new residents in a jurisdiction—experience complications when updating their address that increases the likelihood of late rejections, but does not have a bearing for on-time ballots rejected for mistakes on the BRE. This suggests that new registrants may be more likely to have a ballot rejected not because they lack familiarity with a new electoral process but because of issues associated with being a new resident.

The differences in VBM ballot rejection rates in Georgia's 2018 General Election highlight the importance of distinguishing between the reasons for mail-in ballot rejections where possible. Doing so allows for a greater understanding of changes that might be made to mail ballot systems to address the inequities documented in mail ballot rejections. Still, we caution that differences in the likelihood of VBM ballots being rejected are not necessarily evidence of explicit voter discrimination against certain groups of voters by local election officials. We are not able to directly observe the determinants of VBM ballot rejections across Georgia's 159 counties; isolating the specific reasons why these groups of voters are more likely to have their ballots rejected by local election authorities would require a different research design. While we offer possible theoretical explanations for these rejections, we do not claim to directly test for the causal mechanisms that connect these groups of voters with higher rates of ballot rejection. Future research, we suggest, should more directly explore possible causal mechanisms that explain the disproportionate likelihood of rejection of VBM ballots cast by newly registered, young, racial and ethnic minority voters. We suggest scholars partner with election officials to explore both individual-level reasons and structural conditions and administrative decisions made by election officials, including variation in voter education and outreach and postal service resources.

When it comes to VBM policy-making, our findings indicate that state and local election officials should play an important role in the civic education of voters who vote by mail. Voter education efforts by election officials, as well as those of parties, interest groups, and voting rights groups regarding the mail voting process, are crucial for young, recently registered, and racial and minority voters who wish to vote by mail in upcoming elections. While the higher incidence of VBM ballots being rejected for these groups may arise from their lack of experience or familiarity with the mail-in voting process, local election officials have a responsibility—statutorily in many states, including Georgia—to inform voters about how to minimize mistakes. Moreover,

voters who cast mail-in ballots, only to have them rejected for problems with the return envelope, should be informed in a timely manner of the problem and be given an opportunity to cure their ballot.

## Declaration of Conflicting Interests

## Funding

## ORCID iD

Enrijeta Shino  iD https://orcid.org/0000-0003-1941-8012

## Notes

| | |
|---|---|
| Data Availability Policy | Materials for replication are available at https://doi.org/10.7910/DVN/KZBRTX. |
| 1 | Data from Georgia's June 2020 primary, as well as from other states' 2020 primary elections, indicate not only that record numbers of mail ballots were cast but also high rejection rates (Baringer, Herron, and Smith 2020; Fessler and Moore 2020; Hood and Haynes 2020). |
| 2 | State election codes differ in their requirements for confirming eligibility of voters casting a vote-by-mail (VBM) ballot. Furthermore, despite most states having uniform election codes, there may be variation at the local level, as election officials have considerable discretion over the standards by which they evaluate mail ballots. See National Conference of State Legislatures (NCSL 2020) for details. |
| 3 | See GA Code§ 21-2-386 (a)(1)(F). |
| 4 | There is variation in terms of what is required of voters on a ballot return envelope (BRE) to be verified. Officials in thirty-five states, for example, compare signatures on return envelopes with signatures from voter registration files (NCSL 2020). |
| 5 | See GA Code § 21-2-384 (c)(1). |
| 6 | There were a total of 106,907,365 in-person ballots cast in 2016; of these, 2,460,421 were provisional ballots, and 711,061 provisional ballots were rejected. This yields a rejection rate of about 0.67 percent for in-person voting. Data were calculated by authors from the U.S. Election Assistance Commission (2017). |
| 7 | When it comes to how these structural conditions affect an individual's political participation, see Michener (2018, 29), who observes "institutionally embedded contexts affect individuals' experiences with policies, which can in turn affect their political capacity and shape a wide range of participatory actions." |
| 8 | The snapshot of Georgia's absentee file of January 2, 2019, had 37,913 duplicates, meaning that "unique" registrants had two or more entries. We removed duplicated entries by keeping only the record identifying the ballot status as an A (accepted; 17,202 registrants) or R (rejected; 336 registrants), discarding the C (canceled) and S (spoiled) cases. |
| 9 | We offer a series of additional descriptive statistics, including graphs, in the appendix. |
| 10 | To account for the sample selection bias that may arise from what is effectively a nonrandom sampling of VBM voters, we estimated our models using Heckman's sample selection model. Findings are consistent with the ones reported in the study. Results are available from the authors upon request. |
| 11 | "Other" encompasses American Indian/Alaska Native and Native Hawaiian or other Pacific Islander voters. |

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## Appendix

*Aggregate Vote-by-Mail (VBM) Rejection Rate by Count and Race Group*

In Figure A1, we plot forty-five degree plots highlighting the relationship between VBM rejection rates by race. Figure A1(A) shows a forty-five degree plot comparing the rejection rate of VBM ballots cast by black and white voters in each county. Counties that fall on the forty-five degree line show no difference on the VBM rejection rate for black and white voters. However, we observe that the majority of Georgia counties fall above the line. In other words, VBM ballots cast by black voters were rejected at a higher rate across Georgia's counties as compared with ballots cast by white voters. For example, Polk county had a rejection rate of about 16 percent for VBMs cast by black voters, compared with 8 percent for white voters. Similar patterns are observed for other counties such as Taylor, Warren, and Putnam, to name a few. Similar patterns are observed in Figure A1(B), comparing aggregate rejection rates for white versus Hispanic voters. Hispanic voters faced higher rejection rates than white voters. For example, Putnam and Thomas counties had a rejection rate of roughly 20 percent for VBM ballots cast by Hispanic voters.
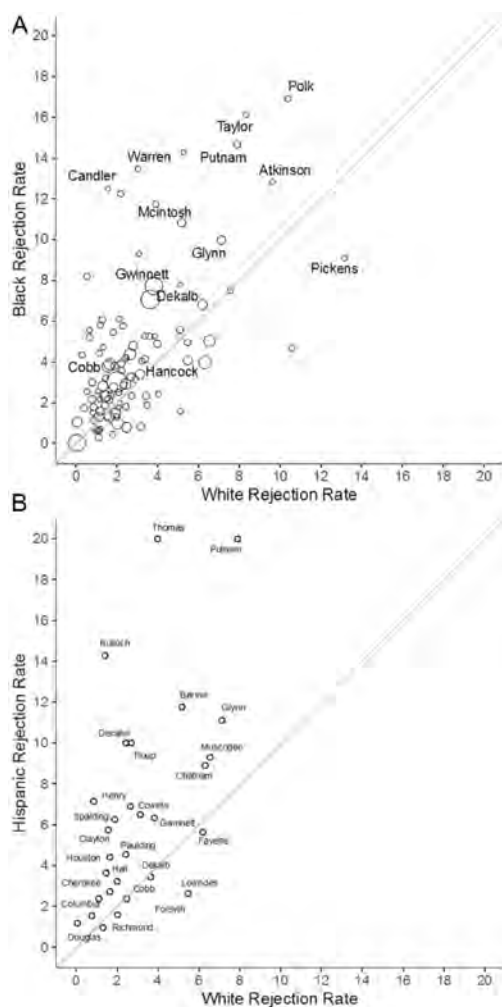


**Figure A1**. VBM ballot rejection rate for race by county: (A) black versus white and (B) Hispanic versus white.
The two plots show the overall VBM rejection rate for each county. The rejection rate for each racial/ethnic group is calculated as the number of rejected VBM ballots cast by each group divided by the total number of VBM ballots cast in a county. VBM = vote-by-mail.